DOCUMENT RESUME

ED 254 749 CE 041 053

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TITLE A Pilot Study on Career Choices of High Achievers versus Non-Achievers with Reference to Locus of Control and Field Dependence.
PUB DATE Jan 85
NOTE 15p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Career Choice; *Field Dependence Independence; *High Achievement; High Schools; *High School Students; *Locus of Control; *Low Achievement; Vocational Interests
IDENTIFIERS *Self Directed Search

ABSTRACT

This research study investigated whether locus of control and field dependence had a relationship to student achievement in grades 11 and 12, and if there were any relationship between these variables and career choice. Using the Self-Directed Search and identifying the first letter of the three-letter code created by answering the questions in the test and identified through the students' perceived occupational preference, a comparison was made to the student's locus of control, field dependence, and achievement status. From 50 high achievers and 50 non-achievers in grades 11 and 12, a random sample of 13 students was selected from each group to identify potential relationships and differences. High achievers were found to have a more significant internal locus of control and to be significantly more field independent than low achievers. In both of the career codes (summary and choice), the first letter for the high achievers and for those with an internal locus was found to be predominantly investigative, while the first letter for the non-achievers and for those with an external locus was realistic. In addition, the Self-Directed Search provided three-letter combinations felt to be aligned with certain occupational possibilities. However, there are some three-letter codes not felt to be compatible with job possibilities; 5 of the 13 non-achievers had such codes, while all of the high achievers had appropriate codes. (Author/KC)

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ED254749

A Pilot Study on Career Choices of High Achievers versus Non-Achievers with Reference to Locus of Control and Field Dependence

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January 1985

CE041053

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Abstract

Locus of control and field dependence have been found to have a significant influence on the academic achievement of middle school children when viewed conjunctively (Garner & Cole, 1984). This research investigated whether or not locus of control and field dependence had: 1) the same relationship to student achievement in grades 11 and 12, and 2) if there was any relationship between these variables and career choice.

Using the Self Directed Search and identifying the first letter of the three letter code given by answering the questions in the test and identified through the students' perceived occupational preference, a comparison was made to the student's locus of control, field dependence, and achievement status. From 50 high achievers in grades 11 and 12 and 50 non-achievers, a random sample of 13 students was selected from each group in a study to identify potential relationships and differences. In the analysis of the data, however, some strong results were found concerning the profile for some students.

High achievers were found to have a more significant internal locus of control and to be significantly more field independent than the low achievers. In addition, students whose first letter in the career code from the summary of their responses as well as the first letter of their perceived choice were found to be different in a chi square comparison of achievers and non-achievers,

and of students with an internal and an external locus of control. In both of the career codes (summary and choice) the first letter for the high achievers and for those with an internal locus was found to be predominantly investigative, while the first letter for the non-achievers and for those with an external locus was realistic. In a comparison of field dependence and the first letter of the codes, no differences were found, but the small sample size may have had an effect on the distribution.

In addition, the Self Directed Search provided three letter combinations felt to be aligned with certain occupational possibilities. However, there are some three letter combinations not felt to be compatible in relation to job possibilities. The high achievers were all found to have appropriate three letter codes, however, five of the 13 non-achievers had three letter codes that were not compatible combinations.

A Pilot Study on Career Choices of High Achievers versus Non-Achievers with Reference to Locus of Control and Field Dependence

Theories on career development and occupational choice have been topics of interest to educators for over 50 years. Research in this area has been extensive, and, understandably, primarily oriented to job satisfaction and success, and psychosocial variables.

Realizing the large body of research related to career choice, the concern for this study was whether or not career expectations, or choices (dependent-variable) with reference to locus of control and field dependence (independent variable) may be able to provide some helpful information about students for guidance and program purposes. This possibility seemed logical because many theories on career development have evolved from personality theories.

This project initially sought to investigate possible relationships between career choice and achievement. However, as a result of a previous research project involving locus of control and field dependence, the project gathered the additional data on these variables for further potential insights.

The data from the project had provided not only information for additional investigation, but also data establishing distinct patterns of evidence significant in itself. These patterns suggest potential relationships which should be recognized by educators, particularly those who wish to provide assistance to non-achievers.

Methodology

This study looked at students in grades 11 and 12 with respect to their achievement, career choice, locus of control, and field dependence. Although there is considerable theory related to each variable, as well as for each of the tests utilized in this study, current research suggested that when viewed in conjunction with each other, a unique profile of a learner may be revealed. The purpose of this project, therefore, was to determine if there was any merit to such a profile.

In order to determine career choice, the Self Directed Search (Holland, 1977) was used. Holland's (1973) theory of career choice classified the personal orientation of people into six categories: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. He also provided a list of occupations felt to be compatible for each classification, as well as some other related characteristics considered important to a career choice (e.g. leadership).

The Self Directed Search provided two sets of three letter codes (e.g. IRA) that designated an area of occupational preference. One set of code letters came from the examinee's responses to the questions, and are referred to in this report as the "Summary Code." The other set of code letters came from the examinee's personal speculation about his/her occupational preference, and are referred to in this report as the "Choice Code."

Although the codes consisted of three letters, each representing one of the personality classifications, the first letter of the code was felt to be more representative of the personality of the examinee. In other words a person with a classification code of IRA would be considered to be an "Investigative" type. The analysis for this project concentrated on the first letter of the summary code and the choice code.

There were instances when an examinee had a set of three summary code letters not considered to represent any interests for which possible jobs exist. Holland considered these three letter codes to indicate interests inconsistent with available occupations, and to have the potential to lead to dissatisfaction (Holland, 1977). This project sought to determine if such codes may be related to the characteristics for a specific group of students.

The variable, locus of control (LOC), was introduced by Rotter in 1954 as a function of reinforcement. A later definition by Rotter (1966) defined LOC as:

> the degree to which the individual perceives the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside himself and may occur independently. (p. 1).

In other words people with an external LOC do not feel in control of their destiny, while those with an internal LOC feel they are in control. Because locus of control scores are on a continuum, a person's score will fall on a range between the extremes: internal and external.

The third variable included in the study was field dependence, which represents the way a person assimilates and processes information. The scores from this test are also on a continuum with field independence and field dependence representing the two extremes.

Field dependent individuals tend to view a field of information as a whole, and apply it directly. Field independent people are considered to be analytical in solving problems, and able to extract data from a field of information by cognitively restructuring the field. Those who are more field dependent tend to be more sensitive to social cues and able to develop stronger interpersonal competencies than field independent individuals (Witken & Goodenough, 1981, 1977); Witken, Moore, Goodenough, & Cox, 1977).

In an investigation of the theory proposed by Lefcourt and Telegdi (1977) that LOC and field dependence should be viewed in relationship to each other, distinct differences were found between socio-economically disadvantaged achievers and non-achievers (Garner & Cole, 1984). These findings found achievers to be significantly more field independent and more internal in their LOC than the non-achievers. In these comparisons, career choice was not included as a variable to be compared LOC and field dependence.

Findings

From the top 50 and bottom 50 academically ranked students in grades 11 and 12 at a senior high school in New Jersey, a random

sample of 26 students was chosen in May, 1984. Thirteen of these students were high achievers while 13 were low achievers. After these 26 out of 100 students were identified, they were administered the Self Directed Search (Holland, 1977), the Nowicki-Strickland Locus of Control for Adults (1972), and the Group Embedded Figures Test (Oltman, Raskin, & Witken, 1971).

The two groups were nearly equally divided between male and female students, and were representative of all program areas from college prep to vocational education. The test scores were recorded for each subject, who was given a code number.

The high achievers and low achievers were first grouped according to their field dependence and locus of control as shown in Figure 1. For the distinction of internal/external and field independence/field dependence, the means of the subjects tested were used for establishing the groups. In the analysis of the eight groups shown in Figure 1, a chi square $\chi^2(3, N=26)=13.36$, $p<.05$ indicated a significant difference in the distribution of the subjects with the high achievers being mostly internal LOC/field independent and the low achievers being primarily found in the external LOC/field dependent segment. This was the same configuration found by Garner & Cole (1984).

In comparison of the LOC and field dependence between high achievers and low achievers, significant differences were found.

The high achievers had a significantly more internal LOC (M=13.62) than the low achievers (M=8.08), $t(24) = 2.64$, $p < .02$. For field dependence the high achievers (M=14.77) were found to be significantly more field independent than the low achievers (M=7.38), $t(24) = 2.86$, $p < .01$. As an insurance factor a Mann Whitney U was also calculated with respect to these data and the results indicated significant difference $p < .02$ for both sets of data. Again these were similar to the results found by Garner and Cole (1984) in a study of eighth grade socioeconomically disadvantaged students.

The second part of the study consisted of the identification of the two career codes for the groups identified in Figure 1. This breakdown is shown in Figure 2, in which the first letter was selected from the student's career summary code and the student's choice code, which is shown in a parenthesis. From this breakdown a series of observations were made. However, it must first be noted that all of the high achievers had three letter "summary codes" considered by Holland to be consistent with possible jobs. For the 13 low achievers, who were significantly more external and field dependent, five had three letter summary codes which were not identified by Holland as consistent combinations be related to possible jobs.

When the high achievers and low achievers were compared with respect to their first letter code for both the summary of their

interests and their proposed choice, a distinct difference was noted. For the summary code, the first letter for 6 of 13 high achievers was I, or Investigative, while the first letter for 8 of 13 low achievers was R, or Realistic. The same pattern held true for the first letter of the student choice code in which 9 of 13 high achievers had I, or Investigative, however 7 of 13 low achievers had R, or Realistic.

Conclusion

The differences found in locus of control, field dependence and career interests between high achievers and low achievers raise a number of interesting questions, especially for vocational education. First of all, the combination of the locus and field dependence scores indicates that the relationship to achievement found for the middle school disadvantaged students (Garner & Cole, 1984) seems to hold true for the high school students who are not from a lower class or low socio-economic background. A comprehensive investigation is needed to investigate this further.

With respect to the strong implications for career choice, there are several questions to be asked. Realizing that the students who are between the high and low achievers will round out the occupational choices for all code letters, the investigative and realistic codes seem to be linked to achievement. The investigative selections are the primary interest for the high achievers and the suggested occupations are alighned primarily to those requiring a college education. Realistic occupations, on the other hand, denote a more vocational

education direction. Are the differences due to achievement success or failure, or is achievement success or failure due to the occupational ineresrts?

For the low achievers who do not select a code combination that is appropriate to any occupation, a red flag must be noted. Does this mean that low achievers (5 of 13) are not capable of making a proper choice? If not, why not?

Obviously, a pilot study is designed to raise questions and not to provide answers with significant statistical results. The questions raised by this pilot need to be investigated further in a research study with appropriate numbers and controls. The need is immediate because these questions create serious concerns on the effectiveness of career education, and the lack of promise of any vocational education training for children who are incapable of making an appropriate career selection.

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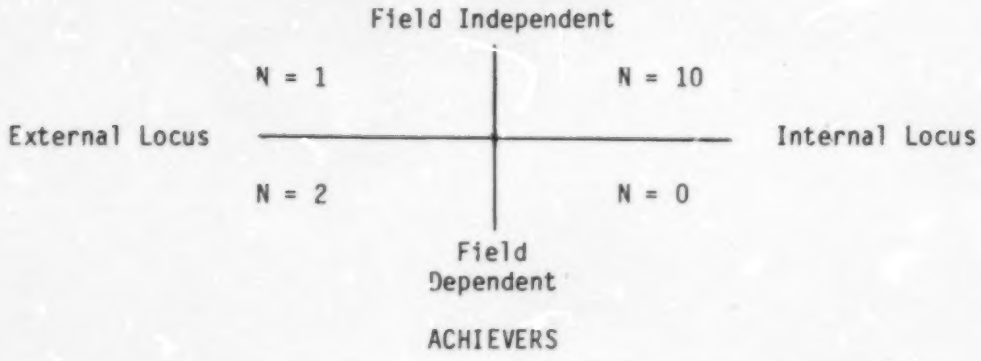
Figure 1: Number of High Achievers and Low Achievers by Field Dependence and Locus of Control



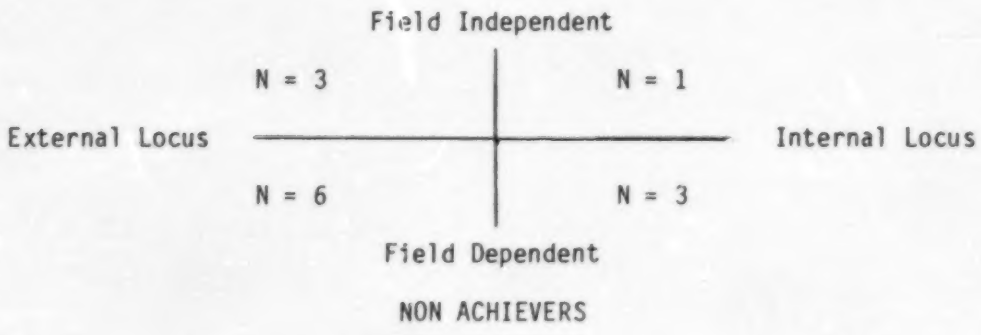
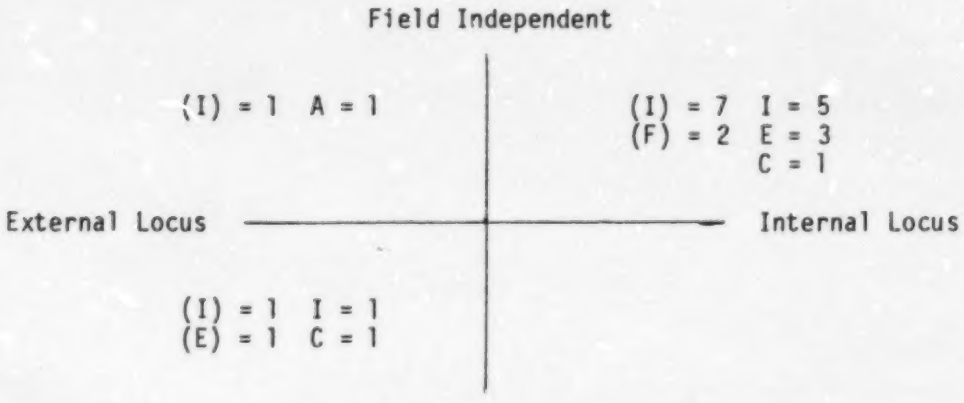
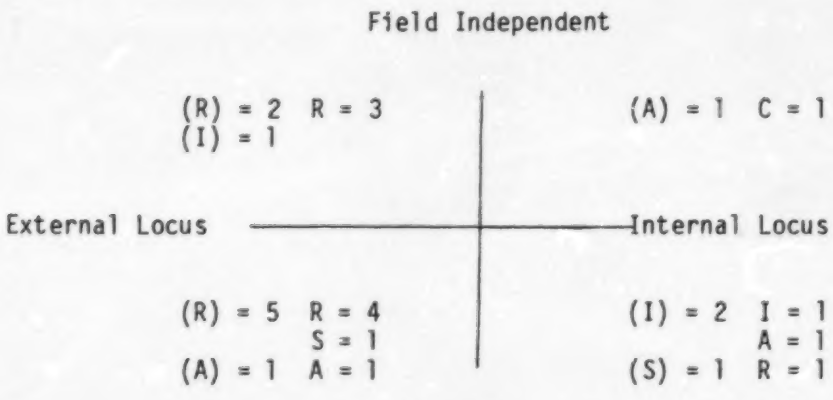


Figure 2: First Code Letter of the Career Summary Code and Choice Summary Code for High Achievers and Low Achievers Sorted by LOC and Field Independence



ACHIEVERS



NON ACHIEVERS

Note: Code letter in parenthesis indicates the student choice code